SEMESTER EXAMINATION, DECEMBER -2022

Course Name:- B.Tech **Semester:- I**

Paper Name:- Programming for Problem Solving **Paper Code:- TES-101**

Time - 2 Hrs + 20 minutes per hour extra time for V.I. & examinees with writer. **Max Marks-70**

समय– 2 घण्टे + 20 मिनट प्रति घंटे अतिरिक्त–दृष्टिबाधित एवं सह लेखक परीक्षार्थियों के लिए। अधिकतम अंक–70

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **04** marks. All questions are compulsory.
- Section B- Answer any **2 out of 4** given questions in maximum hundred **(150) words**. Each question carries **10 marks**.
- Section C- Answer any **2 out of 3** given questions in maximum five hundred **(250) words**. Each question carries **15 marks**.

निर्देश:

- प्रश्न पत्र में तीन खण्ड अ, ब, व स हैं। सभी खण्ड अनिवार्य हैं।
- खण्ड–अ में प्रत्येक प्रश्न **चार** अंक का है। सभी प्रश्न अनिवार्य हैं।
- खण्ड–ब में **चार** प्रश्नों में से किन्हीं **दो** प्रश्नों के उत्तर अधिकतम **डेढ़ सौ (150) शब्दों** में दें। प्रत्येक प्रश्न 10 अंक का है।
- खण्ड–स में **तीन** प्रश्नों में से किन्हीं **दो** प्रश्नों के उत्तर अधिकतम **ढाई सौ (250) शब्दों** में दें। प्रत्येक प्रश्न 15 अंक का है।

Section – A (खण्ड–अ)

Objective Questions(वस्तुनिष्ठ प्रश्न)

1. Answer all the following questions. **5×4=20**
निम्नलिखित सभी प्रश्न अनिवार्य हैं।

i) Which of the following is true for variable names in C?

a) They can contain alphanumeric characters as well as special characters

b) It is not an error to declare a variable to be one of the keywords(like goto, static)

c) Variable names cannot start with a digit

d) Variable can be of any length

ii) Which of the following declaration is not supported by C language?

a) String str;

b) char *str;

c) float str = 3e2;

d) Both “String str;” and “float str = 3e2;”

iii) Which of the following are C preprocessors?

a) #ifdef

b) #define

c) #endif

d) all of the mentioned

iv) The standard header _____ is used for variable list arguments (...) in C.

a) <stdio.h >

b) <stdlib.h>

c) <math.h>

d) <stdarg.h>

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v) What will happen if the following C code is executed?

```
#include <stdio.h>
int main()
{
   int main = 3;
   printf("%d", main);
   return 0;
}
```

a) It will cause a compile-time error

b) It will cause a run-time error

c) It will run without any error and prints 3

d) It will experience infinite looping

Section – B (खण्ड–ब)
Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any two of the following questions in maximum 150 words. **10×2=20**
निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर अधिकतम 150 शब्दों में दें।

i) Define recursion. Write a program to find the factorial of a number using recursive function.

ii) Draw a neat and clean block diagram of a computer. Explain the functioning of each component with suitable example.

iii) Write a program to print the pattern

```
1
2 3
4 5 6
7 8 9 10
```

iv) Explain different type of operators in C programming. Which concept makes the difference between operators when precedence is same?

Section – C (खण्ड–स)
Descriptive Questions (विवरणात्मक प्रश्न)

3. Answer any two of the following question in maximum 250 words. **2×15=30**
निम्नलिखित में से किन्हीं दो प्रश्नों के उत्तर अधिकतम 250 शब्दों में दें।

i) Write short note on array. Write the program for matrix multiplication of two matrix elements.

ii) Explain the difference between parameter passing mechanism call by value and call by reference. Which is more efficient and why?

iii) What is an Flow Chart? While purchasing certain items a discount of 10% is offered if the quantity purchased is more than 1000.If the quantity and price per item are input through the keyboard. Draw the flow chart to calculate the total expenses.

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